THE GENETIC HISTORY OF HIBISCUS ROSA-SINENSIS

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LITERATURE on the genetic history of ornamental hibiscus, commonly called *Hibiscus rosa-sinensis*, is very limited. Many factors contributing to its present state of development are not known; some have no doubt been lost forever. This paper has been prepared for the purpose of bringing together such facts as are available in print, supplemented by observations made in growing and hybridizing old forms and species during the past two decades. It is not offered as a definitive treatment of the genus, but an attempt to present background information for the hundreds of fellow fanciers and hybridists in many countries who are now showing serious interest in this group.

When referring to ornamental hibiscus as *H. rosa-sinensis*, modern taxonomists cite as their authority LINNAEUS' *Species Plantarum* (1753). The type he referred to was probably the double red which had wide distribution throughout China, India, South-East Asia and the Pacific Islands in pre-European discovery days; later, a single red form was included in the taxonomic treatment of this hibiscus. In the early decades of the nineteenth century, other forms were introduced into the greenhouses of Europe as *H. rosa-sinensis*. Most of these were from Asia and the islands of the South Indian Ocean, where they were believed to have been grown before recorded history. Others were cultivars from interspecific crosses made by early plantsmen, in several parts of the world.

An outstanding contribution to the advancement of ornamental hibiscus development during this period was made by CHARLES TELFAIR (1), a dedicated plant lover residing on Mauritius, one of the Mascarene group. As early as 1820 he began crossing the native *H. liliiflorus* with old forms of *H. rosa-sinensis* brought to this tiny South Indian Ocean island, and sent propagating material of his hybrids to the famous plantsman, ROBERT BARCLAY, of Bury Hill, Surrey, who introduced them to English gardeners.

But the most significant and rewarding interest in bringing hibiscus species and hybrids together began about 1900 in Hawaii, India, Ceylon, Fiji, and Florida, the centres of primary interest today. This work has clearly indicated that the ornamental hibiscus designated as *H. rosa-sinensis* is in reality a highly polymorphic group composed of complex hybrids and their derivatives. While its hybrid origin and the subsequent range of colour and form which may be produced from one cross heighten the interest in hybridizing as a garden hobby, it also suggests to the taxonomist that it should now be referred to as *Hibiscus* × *rosasinensis* to represent properly its hybrid nature.

GEOGRAPHICAL ORIGIN OF *H. rosa-sinensis*

The literature on *H. rosa-sinensis* does not establish its geographical origin; however, most early references call it a native of China. As early as 1810, JOHN REEVES, a tea merchant in China and collaborator-member of the Royal Horticultural Society, London, commissioned a Chinese artist to paint in water colours the various forms of hibiscus then grown in China, forms which he and others sent to England for propagation. Now in the Lindley Library of the Society, these illustrations include double forms of red, pink, buff, orange, yellow, and white hibiscus. No single forms of *H. rosa-sinensis* appeared in the collection; singles were considered rare in China, according to contemporary literature, and it was not until the introduction of the South Indian Ocean species a few years later that they became popular with English fanciers. Although *H. rosa-sinensis* was known and grown very early in China, and called 'Chinese Rose', Hu (2) says that "long accredited as a native of China, the wild form has not been discovered [in China]".

In India, *H. rosa-sinensis* was called Sehem-pariti, and later "shoe flower" by the Portuguese, who found it being used as a shoe polish by the natives, and a double red hibiscus was illustrated and described by VAN RHEEDE (3) in 1678. The single red form was reported growing wild on the Malabar Coast of India, but this area has not been established as its native habitat. Such claims probably refer to *H. rosa-malabarica* (4) not considered allied to *H. rosa-sinensis*. PHILIP MILLER, Curator of the Chelsea Physic Garden, London, introduced the double red and other forms of *H. rosa-sinensis* in England as early as 1731 under the name of *H. javanica*, calling them natives of Java. COOK and other Pacific explorers found the double red form cultivated in several island groups. Of its presence there the great Pacific-area botanist, E. D. MERRILL, says, "(*H. rosa-sinensis*) is a pre-Magellan, man-introduced ornamental species from the West" (5), meaning, of course, that it had been brought in to the Pacific during the Polynesian migrations from South-East Asia. This form is still commonly grown in all parts of the world where hibiscus thrives.

HOCHREUTINER (6), who places *H. rosa-sinensis* within Section Lilibiscus of the genus Hibiscus, offers the suggestion that this section "had its centre in the hypothetic Lemuria". Lemuria is said to be an ancient, sunken continent of which the Malagasy claim only Madagascar remains emergent. More convincing support of HOCHREUTINER's theory can be found in the fact that three—and possibly four—of the known species determined genetically compatible with all forms of *H. rosa-sinensis* and with one another, are native to the South Indian Ocean islands and the African East Coast, while no species with these genetic characters have been established authoritatively as endemic in Asia or the East Indies. The people of South-East Asia, favoured by seasonal winds, did migrate westward in the South Indian Ocean area, just as their brothers moved eastward into the Pacific during the great Polynesian migrations. Plant introductions could have moved either east or west; however, since most